

CLAIM AMENDMENTS

Please amend Claims 14 and 16-24 as follows:

1. (Withdrawn) A method of operating a solid-state image sensing apparatus having pixels each including a photoelectric conversion element, a field effect transistor whose gate receives photo-charge generated by said photoelectric conversion element, and a transfer switch for controlling connection between said photoelectric conversion element and the gate of said field effect transistor, wherein

transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor is performed under a condition that a channel is formed under the gate of said field effect transistor.

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2. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein said field effect transistor is operated in a triode region during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

3. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein said field effect transistor is operated under a condition that a gate voltage of said field effect transistor is greater than a sum of a source voltage and a threshold voltage of said field effect transistor during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

4. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein said field effect transistor is operated under a condition that a gate voltage of said field effect transistor is greater than a sum of a drain voltage and a threshold voltage of said field effect transistor during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

5. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein the solid-state image sensing apparatus has a selection switch for controlling connection between a drain of said field effect transistor and a fixed voltage source, wherein

said selection switch is controlled to be off during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

6. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein the solid-state image sensing apparatus has a selection switch for controlling connection between a source of said field effect transistor and an output line, wherein

said selection switch is controlled to be on during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

7. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein the solid-state image sensing apparatus has a source of fixed current for providing current to a source of said field effect transistor, wherein

the source of said field effect transistor and said source of fixed current is connected during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

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8. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein the solid-state image sensing apparatus has a fixed voltage source for applying a source of said field effect transistor, and a switch arranged between the source of said field effect transistor and said fixed voltage source, wherein

the source of said field effect transistor and said fixed voltage source is connected during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

9. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 1, wherein said photoelectric conversion element is a photodiode, and said photodiode is depleted after the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

10. (Withdrawn) A solid-state image sensing apparatus comprising:

a plurality of pixels each including a photoelectric conversion element, a field effect transistor whose gate receives photo-charge generated by said photoelectric conversion element, and a transfer switch for controlling connection between said photoelectric conversion element and the gate of said field effect transistor; and

control means for controlling that transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor is performed under a condition that a channel is formed under the gate of said field effect transistor.

11. (Withdrawn) The solid-state image sensing apparatus according to claim 10, wherein said control means controls said field effect transistor to operate in a triode region during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

12. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 10, wherein said control means controls said field effect transistor to operate under a condition that a gate voltage of said field effect transistor is greater than a sum of a source voltage and a threshold voltage of said field effect transistor during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

13. (Withdrawn) The method of operating the solid-state image sensing apparatus according to claim 10, wherein said control means controls said field effect

transistor to operate under a condition that a gate voltage of said field effect transistor is greater than a sum of a drain voltage and a threshold voltage of said field effect transistor during the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.

14. (Currently Amended) A solid-state image sensing apparatus comprising:

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a plurality of pixels each including a photoelectric conversion element, a field effect transistor whose gate receives photo-charge signals generated by said photoelectric conversion element, a first switch ~~for controlling~~ adapted to control a connection between said photoelectric conversion element and the gate of said field effect transistor, and a first reset ~~means for resetting~~ circuit adapted to reset the gate of said field effect transistor;

output lines ~~for transferring~~ adapted to transfer respective outputs from said field effect transistors;

~~load means, loads~~ provided on said output lines; for said field effect transistors; and

~~second reset means for resetting~~ circuits adapted to reset said output lines to a predetermined voltage not equal to ground voltage; and

driving circuits adapted to reset said output lines, to transfer to said output lines ~~first signals obtained from said field effect transistors by resetting the gates of said field effect transistors, to turn on said first switches and reset said output lines~~

while transferring said photo-charge signals to the gates of said field effect transistors, and then to transfer second signals from said field effect transistors to said output lines.

15. (Cancelled)

16. (Currently Amended) The solid-state image sensing apparatus according to claim 14, each pixel further comprising a first capacitor ~~for~~ adapted to store temporarily ~~storing~~ an output from said field effect transistor transferred to a respective said output line; and

a second switch for controlling transference of the output from said output line to said first capacitor.

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17. (Currently Amended) The solid-state image sensing apparatus according to claim 14, each pixel further comprising:

a first capacitor ~~for~~ adapted to store temporarily ~~storing~~ an output from said field effect transistor ~~reset by said first reset means~~ the first signal transferred to each of said output lines;

a second switch ~~for controlling~~ adapted to control transference to said first capacitor;

a second capacitor ~~for~~ adapted to store temporarily ~~storing~~ an output from said field effect transistor after said photoelectric conversion element and said field effect transistor are connected via ~~said first switch~~ the second signal transferred to each of said output lines; and

a third switch ~~for controlling adapted to control~~ transference to said second capacitor.

18. (Currently Amended) The solid-state image sensing apparatus according to claim 14, each pixel further comprising a fourth switch, arranged between said field effect transistor and a power supply, ~~for selecting and adapted to select~~ a row.

19. (Currently Amended) The solid-state image sensing apparatus according to claim 14, each pixel further comprising a fourth switch, arranged between said field effect transistor and said output line, ~~for selecting adapted to select~~ a row.

20. (Currently Amended) A method of operating a solid-state image sensing apparatus having pixels each including a photoelectric conversion element, a field effect transistor whose gate receives photo-charge signals generated by said photoelectric conversion element, a first switch ~~for controlling adapted to control~~ connection between said photoelectric conversion element and the gate of said field effect transistor, and a first reset means ~~for resetting circuit adapted to reset~~ the gate of said field effect transistor; output lines ~~for transferring adapted to transfer~~ respective outputs from said field effect transistors; loads means, provided on said output lines for said field effect transistors; and second reset means ~~for resetting circuits adapted to reset~~ said output lines to a predetermined voltage not equal to ground voltage, ~~wherein said method comprising:~~

~~said output lines are reset by said second reset means in advance of connecting of said photoelectric conversion element and the gate of said field effect transistor:~~

resetting said output lines to the predetermined voltage;
transferring to said output lines first signals obtained from said field effect transistors by resetting the gates of said field effect transistors;
turning on said first switches and resetting said output lines to the predetermined voltage while transferring said photo-charge signals to the gates of said field effect transistors; and
transferring second signals from said field effect transistors to said output lines.

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21. (Currently Amended) The method of operating the solid-state image sensing apparatus according to claim 20, wherein the solid-state image sensing apparatus further comprises a first capacitor and a second capacitor connected to each of said output lines, a second switch for controlling connection between said output line and said first capacitor, and a third switch for controlling connection between said output line and said second capacitor, and further comprising the steps of:

transferring ~~a first voltage~~ the first signal, outputted from said field effect transistor reset by said first reset means, to said first capacitor via said second switch; and

transferring ~~a second voltage~~ the second signal, outputted from said field effect transistor after the photoelectric conversion element and the gate of said field

effect transistor are connected via said first switch, to said second capacitor via said third switch.

22. (Currently Amended) The method of operating the solid-state image sensing apparatus according to claim 20, wherein said solid-state image sensing apparatus further comprises a fourth switch, arranged between said field effect transistor and a power supply, for selecting a row, further comprising

~~a step of transferring an output from said field effect transistor to said output line by turning on said fourth switch.~~

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23. (Currently Amended) The method of operating the solid-state image sensing apparatus according to claim 20, wherein said solid-state image sensing apparatus further comprises a fourth switch, arranged between said field effect transistor and said output line, for selecting adapted to select a row, further comprising

~~a step of transferring an output from said field effect transistor to said output line by turning on said fourth switch.~~

24. (Currently Amended) The method of operating the solid-state image sensing apparatus according to claim 20, wherein said photoelectric conversion element is a photodiode, and said method further comprising depleting said photodiode ~~is depleted~~ after the transference of the photo-charge from said photoelectric conversion element to the gate of said field effect transistor.